AMENDMENTS TO THE CLAIMS

Set forth below in ascending order, with status identifiers, is a complete listing of all claims currently under examination. Changes to any amended claims are indicated by strikethrough and underlining. This listing also reflects any cancellation and/or addition of claims.

1. (Currently Amended) A synthetic biomaterial comprising:

a bioactive polymer comprised of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer,

wherein the peptide and/or protein subunit of the bioactive polymer is a cell adhesion peptide and wherein the cell adhesion peptide is ~~a RGD peptide,~~ a dRGD peptide, a YIGSR peptide (SEQ ID NO: 16) or a IVKAV peptide (SEQ ID NO: 20), and the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit.

2. (Previously Presented) The biomaterial of claim 1, wherein the biocompatible polymer is a synthetic polymer.

3. (Withdrawn) The biomaterial of claim 1, wherein the biocompatible polymer is a different bioactive polymer.

4. (Previously Presented) The biomaterial of claim 1, wherein the polysaccharide and/or proteoglycan subunit of the bioactive polymer is selected from the group consisting of aggrecan, agrin, bamacan, heparan sulfate, chondroitin sulfate, keratan sulfate, perlecan, hyaluronan, decorin, dermatan sulfate, biglycan, fibromodulin, alginate, polylactate, polyglycolic acid, starch, dextran, agarose and heparin.

5. (Previously Presented) The biomaterial of claim 4, wherein the polysaccharide and/or proteoglycan subunit of the bioactive polymer is selected from the group consisting of heparan sulfate, perlecan, keratan sulfate, chondroitin sulfate, heparin and decorin.

6. (Canceled)

7. (Canceled)

8. (Withdrawn) The biomaterial of claim 1, wherein the peptide and/or protein subunit of the bioactive polymer is a cell adhesion protein or a fragment of a cell adhesion protein.

9. (Withdrawn) The biomaterial of claim 8, wherein the cell adhesion protein is fibronectin, vitronectin, laminin, fibrin or tenascin.

10. (Withdrawn) The biomaterial of claim 1, wherein the peptide and/or protein subunit of the bioactive polymer is a growth factor protein.

11. (Withdrawn) The biomaterial of claim 10, wherein the growth factor protein is insulin, insulin like growth factors, interleukin-4, platelet derived growth factor, TGF-β., EGF, NGF, IL-2, II-3, VEGF, GM-CSF, M-CSF, G-CSF, EPO or FGF.

12. (Withdrawn) The biomaterial of claim 1, wherein the peptide and/or protein subunit of the bioactive polymer is a growth factor mimetic.

13. (Withdrawn) The biomaterial of claim 12, wherein the growth factor mimetic is a fragment of a growth factor protein.

14. (Withdrawn) The biomaterial of claim 13, wherein the growth factor protein is insulin, insulin like growth factors, IL-4, PDGF, TGF-.beta., EGF, NGF, VEGF, IL-2, IL-3, GM-CSF, M-CSF, G-CSF or EPO.

15. (Withdrawn) The biomaterial of claim 1, wherein the bioactive polymer is comprised of more than one peptide and/or protein subunit.

16. (Withdrawn) The biomaterial of claim 1, wherein the bioactive polymer is comprised of more than one polysaccharide and/or proteoglycan subunit.

17. (Withdrawn) The biomaterial of claim 3, wherein the different bioactive polymer is comprised of more than one peptide and/or protein subunit.

18. (Withdrawn) The biomaterial of claim 3, wherein the different bioactive polymer is comprised of more than one polysaccharide and/or proteoglycan subunit.

19. (Previously Presented) The biomaterial of claim 1, wherein the biocompatible polymer is a synthetic polymer selected from the group consisting of polyurethane, isobutylene, polystyrene-isobutylene-polystyrene, hydrogel, silicone, N-butyl methacrylate, glycidyl methacrylate and combinations thereof.

20. (Withdrawn) The biomaterial of claim 19, wherein the hydrogel is 2-hydroxyethylmethacrylate, polyvinyl alcohol, polyethylene oxide or polyethylene glycol and combinations thereof.

21. (Withdrawn) The biomaterial of claim 1, wherein the biocompatible polymer is hyaluronic acid.

22. (Withdrawn) The biomaterial of claim 1, wherein the peptide and/or protein subunit of the bioactive polymer is selected from the group consisting of RGD peptides, IKVAV peptides (literal sequence disclosed as SEQ ID NO: 18), YISGR peptides (literal sequence disclosed as SEQ ID NO: 19), fibrin fragments and VEGF fragments and the polysaccharide and/or proteoglycan subunit of the bioactive polymer is selected from the group consisting of heparan sulfate, chrondroitin sulfate, keratan sulfate, perlecan and heparin.

23. (Withdrawn) The biomaterial of claim 1, wherein the bioactive polymer is heparin sulfate and a RGD peptide, chrondroitin sulfate and a YISGR peptide (SEQ ID NO: 19), keratan sulfate and a VEGF fragment, a IKVAV peptide (SEQ ID NO: 18) and perlecan or heparin

and a fibrin fragment.

24. (Withdrawn) The biomaterial of claim 23, wherein the biocompatible polymer is a polyurethane, a polyethylene oxides, a silicone polymer SIBS, or N-butyl methacrylate.

25. (Previously Presented) The biomaterial of claim 1, wherein the biocompatible polymer and the bioactive polymer are a miscible polymer blend.

26. (Previously Presented) The biomaterial of claim 1, wherein the biocompatible polymer and the bioactive polymer are an immiscible polymer blend.

27. (Previously Presented) A synthetic biomaterial comprising:

a bioactive polymer comprised of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer;

wherein the bioactive polymer and the biocompatible polymer are crosslinked, and the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit.

28. (Previously Presented) A synthetic biomaterial comprising a copolymer of:

a bioactive polymer comprised of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer,

wherein the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit.

29. (Previously Presented) A synthetic biomaterial comprising a graft polymer of:

a bioactive polymer comprised of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer,

wherein the at least one peptide and/or protein subunit is covalently bonded to

the at least one polysaccharide and/or proteoglycan subunit.

30. (Previously Presented) A synthetic biomaterial comprising a graft polymer of:

a biocompatible polymer;

a bioactive polymer comprising a polysaccharide and/or proteoglycan subunit and a peptide and/or protein subunit;

wherein the polysaccharide and/or proteoglycan subunit is covalently bonded to the biocompatible polymer.

31. (Currently Amended) A synthetic biomaterial comprising:

a bioactive polymer consisting of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer,

wherein the peptide and/or protein subunit of the bioactive polymer is a cell adhesion peptide and wherein the cell adhesion peptide is ~~a RGD peptide,~~ a dRGD peptide, a YIGSR peptide (SEQ ID NO: 16) or a IVKAV peptide (SEQ ID NO: 20), and the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit.

32. (Previously Presented) The biomaterial of claim 31, wherein the biocompatible polymer and the bioactive polymer are a miscible polymer blend.

33. (Withdrawn) The biomaterial of claim 31, wherein the biocompatible polymer and the bioactive polymer are an immiscible polymer blend.

34. (Previously Presented) A synthetic biomaterial comprising:

a bioactive polymer consisting of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer;

wherein the bioactive polymer and the biocompatible polymer are crosslinked, and the at least one peptide and/or protein subunit is covalently bonded to the at least one

polysaccharide and/or proteoglycan subunit.

35. (Previously Presented) A synthetic biomaterial comprising a copolymer:

of a bioactive polymer consisting of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit;

and a biocompatible polymer,

wherein the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit.

36. (Previously Presented) A synthetic biomaterial comprising a graft polymer:

of a bioactive polymer consisting of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer.

37. (Previously Presented) A synthetic biomaterial comprising a graft polymer of:

a biocompatible polymer;

a bioactive polymer consisting of a polysaccharide and/or proteoglycan subunit and a peptide and/or protein subunit;

wherein the polysaccharide and/or proteoglycan subunit is covalently bonded to the biocompatible polymer.

38. (New) A synthetic biomaterial comprising:

a bioactive polymer comprised of at least one peptide and/or protein subunit and at least one polysaccharide and/or proteoglycan subunit; and

a biocompatible polymer,

wherein the peptide and/or protein subunit of the bioactive polymer is a cell adhesion peptide and wherein the cell adhesion peptide is a RGD peptide, a dRGD peptide, a YIGSR peptide (SEQ ID NO: 16) or a IVKAV peptide (SEQ ID NO: 20), and the at least one peptide and/or protein subunit is covalently bonded to the at least one polysaccharide and/or proteoglycan subunit, and wherein the biocompatible polymer and the bioactive polymer are an immiscible polymer blend.